

## THE IMPROVEMENT OF INCOME PER CAPITA AS A PREREQUISITE FOR DECLINE IN FERTILITY

Adi Heru Sutomo  
Department of Public Health, School of Medicine  
Gadjah Mada University, Yogyakarta

Dalam teori transisi demografi, hubungan antara pendapatan dan fertilitas memegang peranan utama dan kenaikan pendapatan itu sendiri adalah gambaran dari pembangunan ekonomi. Beberapa contoh diperlihatkan bahwa dalam tingkat pendapatan yang tinggi tertentu maka hal itu akan selalu berhubungan dengan jumlah kelahiran yang rendah, namun bagaimanapun ketika faktor-faktor yang diperkirakan berhubungan dengan kelahiran dibuat konstan, ternyata hubungan antara pendapatan dan fertilitas itu bisa menjadi positif, negatif dan tidak ada.

*Key words :* Demographic Transition - Economic Development - Quality of Children - Income per Capita

### INTRODUCTION

Several authors have postulated a link between income distribution and aggregate fertility. However, until now there have been few if any quantitative studies explicitly exploring the relationship between these two factors. Data on income distribution have been difficult to obtain especially for countries with low income and high fertility. Also available data have not been readily comparable either over time or from country to country. For the economically more advanced countries for which data are more easily obtainable, income distributions have tended to be relatively stable, so that attention has been diverted away from distribution as a factor in explaining fertility change. Considerably more attention has been given to the impact of changes in the level of income.

The aim of this paper is to discuss the impact of improvement of income per capita on the decline in fertility, especially in the developing countries.

### DISCUSSION

Models of household behaviour based on utility maximization suggest that desired fertility should be positively related to pure income changes; that is, changes which hold constant the relative opportunity costs of children, consumption of goods and services, and what is unfortunately termed the "Quality" of children. However, most changes in household income are not of this pure type, since most raise the opportunity cost of time spent by the parents in children care, which tends to be relatively time-intensive, and create a substitution effects against large families. This effect, combined with changes in other costs, changes in values, aspirations, knowledge of contraceptive possibilities, and other aspects of modernization associated with rising income, leads to the typical findings that the total impact of increases in the level of household income is a reduction in fertility.

The findings from research on household behaviour is reflected in the negative simple correlation between income and fertility at the more aggregate level, including

the comparison across countries at different levels of development. At this level, however, depending on the sample of countries and other socio-economic variables considered in multivariate analysis, the relationship between per capita income and fertility may be either positive, negative or non-existent (Repetto, 1974).

There are a variety of ways in which, in principle, population growth might have exerted a favourable influence on economic growth :

1. The larger population which resulted might have had economics of scale : it might have led to an extension of the market, both directly and also indirectly by stimulating the creation of means of transport, and these ways promoted a greater division of labour. The economics of scale in roads, canals and railways were so important that a greater density of population was in many areas necessary to attain increased output per-head.
2. One also might argue that an abundant supply of labour at the going wage removed the pressure on the rate of profit from this side and, on the assumption that profits were the main source of accumulation and were ploughed back, was in this way favourable to the creation of new capacity. And in a period when there were considerable obstacles to interregional migration, a high rate of natural increase was necessary to an abundant supply of labour. The creation of new capacity so facilitated would, of course, be at the expense of a rise in per capita income; but if the creation of new capacity afforded opportunities for trying out improved methods, it would lead to a more rapid absorption of existing technical knowledge and therefore increases the chances of making further technical progress. And conceivably the addition to knowledge made in this way might be sufficient to raise per capita incomes.
3. Population growth might accelerate the acquisition of technical knowledge more directly; if it resulted in pressure on savings and natural resources, it might stimulate the search for methods which substituted labour for capital and natural resources, and these might prove to more than offset the pressure which originally provoked them.
4. Population growth might have beneficial effects on economic progress where, because of deficient demand, the rate of investment was below that which was warranted by the availability of resources. In this circumstances, by shifting demand towards capital intensive goods such as houses, and by promoting urbanization and the expansion of the cultivated area, population growth stimulated investment, raised effective demand, and accelerated the growth of output.
5. Population growth might induce individuals to work harder and to be prepared more readily to undertake land-clearance, reclamation and enclosure. On this view, a higher rate of investment might result simply from extra effort on the part of the cultivator (Habakkuk, 1965).

There a variety of ways in which, in principle, the effects of income on fertility is negative :

1. The simple cross-sectional relationship of income to fertility is usually negative, while the time series relationship over the business cycle is positive. This is seen to

long run indirect effect of income via education and other fertility reducing variables. Whereas in short run time series analysis these effect wash out, leaving only the positive direct effect of income to appear.

2. Old theory said that a child is a good. As income rises people buy more of most goods, and it was assumed they would have more babies too. But early theorists also assumed, however that a rises in income affects tastes and values in such manner as to reduce the number of children people want.
3. Perhaps the most provocative theoretical outcome of the "household utility maximization" school has been the conclusion that an increase in income might immediately be translated into a decrease in fertility by way of an increase in purchase of other goods whose enjoyment requires time and hence competes with the time the family might spend with children.
4. Higher income leads to, for example, more contraceptive knowledge which in turn reduces fertility. The net effect of all these relationship may theoretically yield a negative or positive unconditional relationship between income and fertility. But in almost every country until now the unconditional relationship has been negative; higher income is associated cross-sectionally with lower fertility. These unconditional cross-section data have led to the belief that in the short-run children are not a "normal good" and that a short run rise in income leads to a decrease in fertility.
5. Increased parental income causes more education for a girl, and more earning power for her as a woman. As theory suggests, additional education is strongly associated with fewer children.
6. As the urban revolution is now sufficiently complete that increased income cannot continue to raise urbanity and thereby decrease fertility.
7. The best statement would seem to be that income is indeed a causal force in long-run fertility decline, but operating through a variety of other factors such as increased education, decreased mortality, improved health, improved nutrition, and so on so forth.

And then it comes down to saying that it is the entire nexus of forces which we call "Economic Development" of which income increase is both an indicator and a driving force that causes fertility to fall in the long run as economic development takes place (Simon, 1977).

The process of economic development has long been known to be associated with societal shifts from high to low fertility. This process encompasses wide-ranging economic, social and demographic changes with implications for almost all facets of human life. It involves changes in a number of key factors such as production structure, labour force distribution, education, population distribution, and life expectancy at birth, among others. The main element in the development process, however, is the sustained rise in per capita income.

In this regard, cross-sectional empirical studies linking fertility to income often yield mixed results. While the historical evidence suggests that income growth tends in the long-run to reduce fertility, the cross-sectional relationship between income and

fertility is sometimes positive, sometimes negative and sometimes statistically insignificant (Mueller, 1983).

At the macro level analysis suggests that the cross-sectional relationship between income and fertility varies widely by stage of economic development. Further, specific variables hypothesized to intervene in this relationship also vary widely in importance by stage of development. The decomposition of income-fertility into direct and indirect components suggests that at the later stages of development income is directly related with fertility but that at earlier stages this relationship is indirect, with the important of specific intervening variables varying across the national groupings. As far as can be determined, although theoretical work by Easterlin (1983) leads to the expectation that such differences will exist by stage of development (as well as according to other cultural and socio-economic dimensions of international differentiation), empirical studies in this regard have been very scarce.

## CONCLUSIONS

Alachkar and Eberstein (1988) concluded that, firstly income is unrelated to fertility for low income countries, is most strongly (but indirectly) related to fertility among lower and middle-income countries, and is less strongly (but directly) related to fertility among nations with industrial market economies. These findings may reflect that one concomitant of economic development is that the entire socio-economic structure of a nation becomes monetized and money income has a more direct consequence for traditionally "non-economic" areas of life.

Thus, prior to the onset of significant economic development, fertility in low income societies is relatively unresponsive to the same kind of income effects as in industrial market economies. National income begins to differentiate fertility only among countries which have passed some basic threshold of economic development. Before this threshold, income is not only unrelated to fertility but also to school enrollment and infant mortality. Further, in the intermediate stages of development (e.g., among lower and upper-middle income nations), income is less relevant for fertility reduction due to direct effects than due to indirect ones. That is to say, in the intermediate stages of development income is most important because of its links to better health status/lower infant mortality and higher level of formal education, which in turn contribute to changing the economic value of children and impact fertility, rather than because of its direct effects. Conversely, the later mechanism is most important among industrial market economies.

It is important to note that, while the model is grounded in the traditional work on economic development and the process of demographic transition, this interpretation is not inconsistent with views more recently developed which are critical of the conventional transition model.

In general, the income-fertility relationship varies both in magnitude and linkages across stages of economic development. These findings are consistent with expectations from both conventional perspectives on economic development and demographic transition as well from more critical points of view based on conceptualization of a world economy.

Secondly, no matter what the broader model of economic demographic change, is the present findings are also relevant for assessing the extend to which programmes designed to enhance schooling and to reduce infant mortality also have the consequence of reducing fertility. These findings suggest that educational enhancement and mortality reductions can operate to reduce fertility independently of income, although for some national groupings more than others.

## SUGGESTION

Despite the fact that both politicians and scientists alike understand that the process of economic development goes hand in hand, and cannot continue without "the spread of education and health services", because of limitations in economic resources in many developing countries governments often find themselves in a hard position to classify priorities in expanding social services. If policy makers however, consider fertility reduction among other goals in implementing certain expenditure programmes, then expanding school enrolment will be more beneficial for this purpose at earlier stages of development, while expanding health care services will be more likely to serve this purpose at later stages.

## ACKNOWLEDGEMENTS

A special thanks go to Heather Joshie, Ph.D and Robert Edward Wright, Ph.D for their helps and suggestions in the preparation of my studies when I was studying at the Centre for Population Studies, the London school of Hygiene and Tropical Medicine, University of London, United Kingdom.

## REFERENCES

- Alachkar, A., & Eberstein, I., 1988 Income, Fertility, and Economic Development, *Genus Volume XIV* No. 1-2.
- Easterlin, R.A. 1983 "Modernization and Fertility: A critical essay". in *Determinant of fertility in Developing Countries* (Vol. 1), edited by R.A. Bulatao and R.D. Lee. New York: Academic Press.
- Habakkuk, 1967 *Population Growth and Economic Development Since 1750*.
- Mueller, E., & Short, C., 1983 *Effects of Income and Wealth on the Demand for Children, in Determinants of Fertility in Developing countries* (Vol. 1), edited by R.A. Bulatao and R.D. Lee. New York: Academic Press.
- Repetto, R, 1974 The Relationship of the Size distribution of Income to Fertility and the Implications for Development Policy, In *Population Policies and Economic Development, A World Bank Staff Report*.
- Simon, J., 1977 *The Economics of Population Growth*. Princeton: Princeton University Press.